

S/N Unknown

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Ronald C. Lundquist et al.

Examiner: Benzion

Serial No.: Not assigned

Group Art Unit:

Filed: Herewith

Docket: 950.005US7

Title: FERTILE TRANSGENIC CORN PLANTS

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-identified Patent Application, please amend as follows:

IN THE SPECIFICATION

On page 1 delete lines 4-8 and replace with the following paragraph:

--This application is a divisional of U.S. patent application Serial No. 08/619,077 filed March 20, 1996; which is in turn a divisional of Serial No. 08/285,488, filed August 3, 1994, now U.S. Pat. No. 5,508,468; which is in turn a continuation of Serial No. 07/636,089, filed December 28, 1990, abandoned; which in turn is a continuation-in-part of Serial No. 07/508,045, filed April 11, 1990, U.S. Pat. No. 5,484,956, which is in turn a continuation in part of Ser. No. 07/467,983, filed January 22, 1990, abandoned; and this application is also a continuation-in-part of U.S. patent application Serial No. 08/677,695 filed July 10, 1996.--

IN THE CLAIMS

Cancel claims 2-9, without prejudice or disclaimer, and add the following claims:

10. A process for producing a fertile transgenic *Zea mays* plant comprising the steps of
(i) bombarding intact regenerable *Zea mays* cells with DNA-coated microprojectiles; wherein said DNA comprises a preselected DNA sequence encoding a *Bacillus thuringiensis* endotoxin, wherein the preselected DNA sequence is adjusted to be more efficiently expressed in *Zea mays* than the native *B. thuringiensis* DNA sequence encoding said endotoxin; (ii) identifying a population of transformed cells comprising said preselected DNA sequence; and (iii) regenerating a fertile transgenic plant therefrom,

wherein said DNA is expressed so as to impart insect resistance to said transgenic plant and is heritable.

11. The process of claim 10 wherein the preselected DNA sequence further comprises a selectable marker gene or a reporter gene.
12. The process of claim 10 or 11 wherein the fertile transgenic *Zea mays* plant is regenerated from transformed embryogenic tissue.
13. The process of claim 12 wherein the cells are derived from immature embryos.
14. The process of claim 10 or 11 further comprising obtaining transgenic insect resistant progeny plants of subsequent generations from said fertile transgenic plant.
15. The process of claim 14 further comprising obtaining seed from one of said progeny plants.
16. The process of claim 10 or 11 wherein the preselected DNA sequence comprises a sequence encoding the HD73 endotoxin of *Bacillus thuringiensis*.
17. The process of claim 10 or 11 wherein the preselected DNA sequence comprises a sequence encoding the HD1 endotoxin of *Bacillus thuringiensis*.
18. The process of claim 10 or 11 wherein the preselected DNA sequence encodes a truncated *Bacillus thuringiensis* endotoxin.
19. The process of claim 10 or 11 wherein the preselected DNA sequence comprises a promoter.

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20. The process of claim 19 wherein the preselected DNA sequence further comprises a promoter operably linked to said DNA sequence encoding said endotoxin and a promoter operably linked to said selectable marker gene.
21. The process of claim 11 wherein the selectable marker gene confers resistance or tolerance to a compound selected from the group consisting of hygromycin, sethoxydim, haloxyfop, glyphosate, methotrexate, imidazoline, sulfonylurea, triazolopyrimidine, s-triazine, bromoxynil, phosphinothricin, kanamycin, G418, 2,2-dichloropropionic acid and neomycin.
22. The process of claim 21 wherein the compound is phosphinothricin
23. The process of claim 11 wherein the compound is kanamycin.
24. The process of claim 11 wherein the compound is hygromycin.
25. The process of claim 10, 11, 16 or 17 wherein the DNA encoding said endotoxin comprises an increased number of maize preferred codons.
26. The process of claim 11 wherein the DNA encoding the *Bacillus thuringiensis* endotoxin is fused in frame with said selectable marker or reporter gene.
27. The process of claim 18 wherein the truncated *Bacillus thuringiensis* endotoxin comprises about the N-terminal 50% of the endotoxin.
28. The process of claim 10 wherein the preselected DNA further encodes a protease inhibitor.

29. The process of claim 19 wherein the preselected DNA further comprises the maize AdhIS first intron or the maize *Shrunken-2* first intron positioned between the promoter and the DNA encoding said endotoxin.
30. The process of claim 19 wherein the preselected DNA sequence further comprises a manopine synthase promoter, a nopaline synthase promoter or an octopine synthase promoter.
31. The process of claim 19 wherein the promoter is the CaMV 35S or 19S promoter.
32. A population of plants obtained by breeding the transgenic plants of claim 10 wherein the preselected DNA sequence is transmitted by Mendelian inheritance through both male and female parent plants.

REMARKS

Claims 2-9 having been cancelled and claims 10-32 having been added, the claims pending in the above-identified application are claims 10-32.

Claims 10-11 and 15-32 are process (method-of-making) claims corresponding to claims 23, 40, 27, 25-26, 30-31, 46, 49-50, 52-55, 58-59 and 61-64 of allowed parent application Serial No. 08/619,077, filed March 20, 1996. Claims 12-14 are supported by claims 2-3, 6 and 28 of Serial No. 08/844,555, now U.S. Pat. No. 6,013,863, which is a progeny application of Serial No. 07/467,983, from which the present application claims priority..

With respect to claims 10-11 and 15-32, applicants elect to proceed under 35 U.S.C. § 103(b), since these claims are related to a "biotechnological process" as defined in § 103(b)(3). This application, and parent application Serial No. 08/618,077 claim the same priority date and are owned by the same entity. Upon indication of the allowability of at least claims 10-11 and 15-32, applicants will file a terminal disclaimer, to meet the requirements of 35 U.S.C. § 103(b)(2)(B).

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The Examiner is respectfully requested to note his consideration of all of the information and documents presented in the information disclosure statements filed in the parent applications.

When the Examiner takes the application up for the first Office Action, consideration of the Amendments and Remarks presented herein is respectfully requested.

Respectfully submitted,

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